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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PARKER, FREDERICK JOHN

ART UNIT	PAPER NUMBER
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1792

NOTIFICATION DATE	DELIVERY MODE
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03/03/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary	Application No. 10/583,960	Applicant(s) POSTOACA, ION	
	Examiner Frederick J. Parker	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Claim Objections

1. The amendments in response to the Claim Objections of the Previous Office Action are acknowledged and appreciated, and the Examiner withdraws the objections.

Claim Rejections - 35 USC § 112

2. The amendments in response to the 35 USC 112 rejections of the Previous Office Action are acknowledged and appreciated, and the Examiner withdraws the rejections.

3. The prior art rejections of the previous Office action are withdrawn as necessitated by amendment and change in scope of the claims. The new rejections replace the previous rejections.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-4,6,10,18, are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Singelyn US 5021259.

Singelyn teaches a thermal spray method of applying thermoplastic polymers entrained in an inert gas stream (col. 3, 44-55 and elsewhere; per claim 18), in which guidance is provided (col. 3, 18-55) for applying the particles such that particles **soften without melting or decomposition** so they adhere to the substrate per claim 1. The thermal spray gun comprises a heating means

Art Unit: 1792

having a flame sufficient to cause softening of the polymer (hence polymers inherently possess softening temperature) during ejection of the particles suspended in the gas (a fluid, per Applicants' claim 3). Therefore the gas-polymer suspension is heated during ejection, which is before Applicants step d), per claims 2 & 6. The thermoplastic polymers on col. 2, 42-52 inherently possess melting points, and accordingly the Examiner takes Official Notice that the melting points of Nylon/polyamide and polystyrene are, by way of example, 365-420F and 240C, respectively. The applied porous coating is then heated in an oven below the polymer decomposition temperature until a dense impermeable film is formed (col. 4, 22-42), per claim 1. Thus Singelyn anticipates Applicants cited claims. Alternatively Singelyn does not recite suspending the pulverous polymer in a fluid/ gas, pressurizing it, or ejecting it. However, such features would have been obvious to the skilled artisan given the known and conventional designs of thermal spray guns, which would have been known to have conventionally comprised suspending pulverous material in a fluid/ gas, pressurizing it, and ejecting it from the thermally heated gun.

Singelyn also teaches to pretreat the substrate per claim 10 by applying a tie coat (primer) to the substrate to improve adhesion of the subsequently applied polymer coating, necessarily pretreating/ activating the substrate using suitable means to prevent the coating from sloughing off at elevated temperatures.

Per claim 4, the powder fed to the flame would have inherently resulted in evaporation of adhered volatiles/ moisture during heating.

Art Unit: 1792

7. Claims 7,8,11-13,19-24,26,27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singelyn, cited for the same reasons previously discussed, which are incorporated herein.

Per claims 12-13,26; coating design is not limited and would have included the continuous or selective coatings of the claims. Homogeneity of the final coating layer is homogeneous as evident from col. 4, 39-41.

Singelyn exemplifies polymer particle sizes between about 1-20 microns, which overlaps the ranges of Applicants claims 7, 20, and 21. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made if the overlapping portion of the particle sizes disclosed by the reference were selected because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Wortheim* 191 USPQ 90. The particles are necessarily manufactured.

Col. 3, 30-36 provides guidance as to adjusting parameters of the spray gun to prevent coalescence (synonymous with “agglomeration” per claims 8,22) of particles to form a non-porous coating upon impact; adjustment of spray gun parameters is cited to be within the skill of those practicing in the art, and hence the pressures of claim 27 are merely optimization of obvious spray gun parameters.

Applied coating thicknesses are approximately 1-25 mils (= 25-630 microns) which is larger than that of Applicants but given the overlap of particle sizes, it would have been apparent that the formation of thinner coatings for a specific end-use applications would have been feasible and obvious based upon end-use considerations to the skilled artisan; thus the thicknesses of claims 11,23,24 would not patentably distinguish over the prior art.

Art Unit: 1792

Per claim 19, modification of the apparatus to provide heating closer to where the powder is entrained in the gaseous fluid would have been an obvious design choice to provide equivalent particle heating means to effect the requisite softening.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Singelyn and to utilize overlapping particle sizes, coating designs, adjustment and optimization of spray gun parameters, etc because such variations would have been obvious and within the purview of one skilled in the art.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Singelyn, cited for the same reasons previously discussed, which are incorporated herein, and further in view of Deshpande et al US 2003/0215644.

Singelyn does not teach use of the process for packaging applications, although the formation of dense impenetrable films is a goal of the process. However, Deshpande teaches the concept of thermally spraying thin films of thermoplastic polymeric material onto substrates including metals to provide a wide range of laminate products including food and beverage packaging which provide barriers to moisture and gases [0101,0105, and elsewhere]. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Singelyn to form packaging materials having gas/liquid barrier properties given the concept disclosed by Deshpande because of the expectation of forming impenetrable thermoplastic layers in the laminate.

Art Unit: 1792

9. Claims 14-17,25 (Device) are rejected under 35 U.S.C. 103(a) as being unpatentable over Singelyn, cited for the same reasons previously discussed, which are incorporated herein, and optionally further in view of McKinney US 5211990.

As to the device claims 14-16, Singelyn teaches or necessarily contains a thermal spray gun in which particles suspended in pressurized air must necessarily be present to be fed through the heated zone (necessarily above the point of softening of the particle material/s) of the gun and transported in a softened state to the substrate. It is the Examiner's position that those features not expressly stated would have been obvious to the skilled artisan given the known and conventional designs of thermal spray guns, which would have been known to have conventionally comprised suspending pulverous material in a fluid/ gas, pressurizing it using compressed gas means, and ejecting it. Nonetheless, he optionally introduces the general teachings regarding thermal spray apparatus disclosed by McKinney in support, see Col. 120-34; col. 3, 56-col. 4, 45; examples, etc. Heating means is cited by Singelyn to be maintained below the melting point of the coating material. Per claim 15, multiple heating means to cause the same effect of thermal softening would have simply been an obvious and equivalent variation to provide the same outcome as Singelyn. The apparatus as claimed is therefore either disclosed by the prior art or simply contains obvious variants/ functional equivalents which would have been obvious to one of ordinary skill. Given the knowledge of the art, Applicants device is merely a combination of conventional and known means which would have provided the predictable results of forming a polymeric layer.

Singelyn also teaches to pretreat the substrate by supplying means to apply a tie coat (primer) to the substrate to improve adhesion of the subsequently applied polymer coating, necessarily

Art Unit: 1792

pretreating/ activating the substrate using suitable means to prevent the coating from sloughing off at elevated temperatures per claims 17,25.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Sineglyn using a conventional thermal spray device comprising mixing and pressurizing means in conjunction with a sprayer nozzle with at least one heating means, and powder flow control means as would have been apparent to one of ordinary skill reading Singelyn, and optionally disclosed by McKinney, to provide a specific means for applying the polymeric coatings onto substrates.

Response to Arguments

Applicants' amendments and remarks have been fully considered. The amendments required new rejections which also render moot Applicants' arguments; therefore the responses are part of the new rejections and further rebuttal by the Examiner is unnecessary.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 1792

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571/272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Frederick J. Parker
Primary Examiner
Art Unit 1792

/Frederick J. Parker/
Primary Examiner, Art Unit 1792